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**FINANCING OF THE ROLL-OUT OF BROADBAND NETWORKS**

-- Note by Turkey --

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## THE FINANCING OF THE ROLL-OUT OF BROADBAND NETWORKS

1. In this contribution, Turkish Competition Authority (the TCA)'s experiences, opinions and current regulatory framework on next generation access (NGA) will briefly be outlined to for "Discussion on the Financing of the Roll-out of new Generation Access Networks" by WG2 Meeting on June 16<sup>th</sup>, 2014.

2. The contribution commences with short background information on fixed and wireless broadband markets in Turkey. Then, "Information Society Strategy" of Turkey is briefly summarised. Contribution continues with current regulatory and competitive structure of the Turkish broadband and NGA markets.

### 1. Background

3. Inclusion of fibre in a close proximity to the end users' premises or connection of consumers to the internet directly through fibre are criteria employed to describe NGA<sup>1</sup>. In this regard, wireless technologies can also be considered to be a part of next NGA.

4. Broadband services were started to be served to consumers in early 2000s by incumbent Turk Telekom, then totally owned by the State. Turk Telekom's majority shares (%55) privatised in 2005. During the privatisation process, taking the opinion provided by the TCA into account, cable TV network was separated from the privatised Turk Telekom and broadband section was organised as a separate legal entity wholly owned by Turk Telekom<sup>2</sup>. This was a year after when all monopoly privileges of Turkish Telekom had been revoked.

5. In Turkey, vast majority of broadband-users is served through the DSL technology. Recent data<sup>3</sup> indicates that the number of DSL subscribers are stabilised around 6.6 million users. Furthermore, while around 1.7 million consumers prefer fixed wireless (3G) access to the internet; subscribers preferring cable TV network is almost 0.5 million. Lastly, almost 1.2 million users connects to the internet via fibre<sup>4</sup>.

6. Between 2011 and 2013, retail broadband market has attained a 10% growth. Given relatively stable subscriber numbers for DSL, cable TV and fixed wireless networks, the growth in the retail broadband market in Turkey, to a large extent, can be attributed to increase in the number of fibre internet subscribers. The table below summarizes the outlook of the retail broadband market in Turkey in recent years.

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<sup>1</sup> OECD (2010): "Next Generation Access Networks and Market Structure", DSTI/ICCP/CISP(2010)5/FINAL, p. 8.

<sup>2</sup> In 2008, an additional 15% shares were privatised through public offering. The Treasury still holds 30% of Turk Telekom shares.

<sup>3</sup> Data is extracted from Information Technologies and Telecommunications Authority's quarterly reports and reflects 2013's last quarter results:  
[http://www.btk.gov.tr/kutuphane\\_ve\\_veribankasi/pazar\\_verileri/ucaylik22\\_5.pdf](http://www.btk.gov.tr/kutuphane_ve_veribankasi/pazar_verileri/ucaylik22_5.pdf) (p. 27, 22.05.2014).

<sup>4</sup> Only includes fibre-to-the-building (FTTB) and fibre-to-the-home (FTTH), excludes fibre-to-the-cabinet (FTTC).

	Number of Subscribers		
	2011 <sup>5</sup>	2012 <sup>6</sup>	2013
<b>DSL</b>	6.776.036	6.643.299	6.644.543
<b>Fixed Wireless</b>	1.547.421	1.909.530	1.701.014
<b>Cable TV</b>	460.451	500.658	486.497
<b>Fibre</b>	267.144	645.092	1.193.704
<b>Other</b>	159.383	139.665	116.043
<b>TOTAL</b>	9.212.446	9.840.256	10.143.814

## 2. Information Society Strategy

7. In 2006, “Information Society Strategy (2006-2010)” and related “Action Plan” were adopted<sup>7</sup> by the Supreme Planning Council and announced at the Official Gazette<sup>8</sup>. This plan revised and detailed by a more comprehensive “Information Society Strategy Renewal Project”<sup>9</sup>. The project aims at providing outputs that will constitute the basis of the new information society structure. The project, which started on November 13th, 2012 includes 8 main topics:

1. IT Sector
2. Broadband Infrastructure and Sectoral Competition
3. Qualified HR and Recruitment
4. Social Transformation
5. Data Security, Personal Data Protection & Secure Internet
6. Information and Communication Technologies based Innovative Solutions
7. Internet Entrepreneurship and e-Commerce
8. User Oriented and Efficient Public Services

8. At the end of the project, 4 main outputs were provided (a) Current Status Report, (b) Global Trends and Country Benchmarking Report, (c) Macroeconomic Projections and Opportunities Report and (d) Needs Assessment and Proposition Reports. Following the main outputs in the second half of 2013, strategies will be developed through contributions from related stakeholders under the coordination by Ministry of Development. This final process is still going on. However, looking at the Needs Assessment and Proposition Report for Broadband Infrastructure and Sectoral Competition topic will provide insights about Turkey’s aspirations for broadband development. The report<sup>10</sup> states the main theme of broadband internet as “increasing broadband internet use and ensuring infrastructure rollout especially on NGA

<sup>5</sup> [http://www.btk.gov.tr/kutuphane\\_ve\\_veribankasi/pazar\\_verileri/ucaylik11\\_4.pdf](http://www.btk.gov.tr/kutuphane_ve_veribankasi/pazar_verileri/ucaylik11_4.pdf) (p. 30, 22.05.2014).

<sup>6</sup> [http://www.btk.gov.tr/kutuphane\\_ve\\_veribankasi/pazar\\_verileri/ucaylik12\\_4.pdf](http://www.btk.gov.tr/kutuphane_ve_veribankasi/pazar_verileri/ucaylik12_4.pdf) (p. 27, 22.05.2014).

<sup>7</sup> Decision dated 11.07.2006, numbered 2006/38.

<sup>8</sup> Date 28.07.2006, issue 26242, available at <http://www.resmigazete.gov.tr/eskiler/2006/07/20060728-7.htm>.

<sup>9</sup> For English website: <http://www.bilgitoplumstratejisi.org/en>.

<sup>10</sup> Available in Turkish at: <http://www.bilgitoplumstratejisi.org/download/docfile/8a32476640e074570140e4c3388b0004>.

networks in order to reap the economic and social benefits of broadband internet". On the basis of this main theme the Report outlined three core strategic/improvement areas:

- Formation of a national broadband plan by determining national broadband target and strategic methods to achieve this target,
- Ensuring NGA rollout by creating an investment friendly environment and also considering competition,
- Increasing demand for broadband internet.

9. A closer look at the second improvement area may hint how NGA rollout will be attained. Under this improvement area following achievements are planned: (i) allocation of sufficient spectrums for mobile broadband, (ii) completion of necessary procedures before the auction for 4G licences gets underway to ensure 4G internet rollout without any delay, (iii) conducting an analysis for the feasibility of producing 4G infrastructure equipment in Turkey, (iv) conducting ex-ante regulatory impact analysis for broadband internet market, (v) deciding on the long-term strategy for the cable TV network and (vi) creating construction standards for newly constructed buildings so as to facilitate fibre access.

10. The report does not propose a strategy; rather it points out four different options with respect to degree of government involvement and underlines their costs and benefits. These options are: (1) Infrastructure ownership by direct investment by the State, (2) National level investment/finance subsidisation, (3) Local level partial investment/finance subsidisation and (4) Just regulative support. As it is stated before, the decision making process about these options still continues but the future of the broadband market in Turkey seems to be NGA and will be steered by the State somehow.

### **3. Current Regulatory and Competitive Structure**

11. Under this topic, current regulatory and competitive structure of the NGA networks in Turkey is detailed. In doing so, more space is allocated to fibre as it has a special regulatory status, which affects the competitive structure. A brief explanation of cable TV concludes the discussion for fixed NGA. Lastly in this section, the contribution touches upon the wireless NGA.

#### **3.1 Fibre**

12. Recently, the most exciting development in retail broadband markets in Turkey is increasing numbers of fibre internet users. The number of fibre internet users has surpassed one million threshold for the first time in 2013, reaching 1.2 million, indicating 23.4% and 85% increases with respect to the previous quarter and the year.

13. Fibre access was first served to the public in 2010 by an alternative operator (Superonline), a subsidiary of the largest mobile operator (Turkcell) in Turkey. The incumbent's subsidiary TNet and other ISPs using Turk Telekom's infrastructure followed Superonline after two years. Currently, Superonline and Turk Telekom are the owners of the two main fibre access networks with some small scale local networks by smaller alternative ISPs.

14. As of the end of first quarter of 2014, fibre home pass is about 4.5 million<sup>11</sup>, which means that more than one in five homes in Turkey can access to the internet via fibre<sup>12</sup>. Tremendous increase in home

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<sup>11</sup> The figure is unofficial, collected from Turkcell's ([http://medya.turkcell.com.tr/medya/Turkcell\\_Superonline\\_Q1\\_sunum.pdf](http://medya.turkcell.com.tr/medya/Turkcell_Superonline_Q1_sunum.pdf)) and Turk Telekom's

pass in just four years should be examined to find out the possible explanations. Until 2010, there was no fibre access in Turkey and until 2011 there was no specific decision by Information Technologies and Communication Authority (ITCA). What is more, the first decision<sup>13</sup> taken by ITCA was aimed at exempting fibre access from direct regulation. The wording of the decision is as follows: “For a period of five years or until number of fibre subscribers reaches % 25 of all broadband subscribers, access to fibre services (FTTH and FTTB) are decided to left out of market analysis process”. Thus, all fibre access investments are left out direct regulation by ITCA, leaving investors with the chance of exploiting all their investments.

15. As it is stated, there are two main fibre access providers in Turkey. Therefore, the current competitive environment and fibre roll out can directly be attributed to these firms’ strategic behaviours and ITCA’s aforementioned decision. The first mover’s advantage might have led Superonline to invest more in fibre access before facing any competition and regulation. This combined with financial strength of and willingness to invest by the parent company, given the favourable regulatory environment, resulted in 1.8 million home pass in four years. On the other hand, after ITCA’s decision and with a possible “meeting the competition” intention, Turk Telekom came out with a strategy of “fibre transformation”<sup>14</sup> aiming at fibre roll out by transforming copper network to fibre. As a result, today Turk Telekom’s fibre access has reached to 2.6 million in about years.

16. While competitive structure of the market is as explained, distribution of availability of fibre access is also worth noting. The incumbent Turk Telekom has fibre access in each of Turkey’s 81 provinces; whereas, Superonline’s network covers just 14 of them. However, these provinces are the most populous ones, covering almost three quarters of total population. Another aspect worth mentioning is that fibre access networks concentrate in city centres for both firms, depriving rural areas of fibre access. One possible explanation for this may be maximising profits by decreasing their cost of investments<sup>15</sup> and to increasing subscription/home pass ratio<sup>16</sup>.

17. The future retail fibre access competition seems to be between Turk Telekom and Superonline as the most lucrative and commercially feasible locations will have been occupied by them by the time regulatory holiday for fibre access is over. With no regulation mandating infrastructure sharing, alternative operators are largely deprived of the chance of building subscriber base necessary to obtain a critical mass. Even the opposite is true, after the regulatory holiday is over, infrastructure sharing obligation force alternative operators either to use Turk Telekom’s or Superonline’s network or to focus on less lucrative areas. As a result, alternative smaller operators having low budgets for large scale investments and receiving no subsidies are expected to fall behind for the competition in the market.

18. Having two alternatives for competition in the market have both positive and negative consequences. Firstly, it will avoid duplication of investments in infrastructure for the supply of same

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([www.tinvestorrelations.com/media/1787/download.aspx](http://www.tinvestorrelations.com/media/1787/download.aspx)) publicly available investor relations documents. No information about overlaps is given.

<sup>12</sup> According to the Turkish Statistics Authority there are 20.489.721 households in Turkey.

<sup>13</sup> Decision by Information Technologies and Communication Board, numbered 2011/DK-10/511 and dated 03.10.2011 ([http://www.tk.gov.tr/mevzuat/kurul\\_kararlari/dosyalar/2011%20DK-10-511.pdf](http://www.tk.gov.tr/mevzuat/kurul_kararlari/dosyalar/2011%20DK-10-511.pdf))

<sup>14</sup> Named as such in 2014 first quarter’s presentation for investors ([www.tinvestorrelations.com/media/1787/download.aspx](http://www.tinvestorrelations.com/media/1787/download.aspx))

<sup>15</sup> As population is concentrated in a smaller areas, the cost investment may possibly decrease.

<sup>16</sup> Subscription/home pass ratio shows how the investment is utilised. As the ratio increases return on investment also increases.

service. Secondly, the negative impact on the environment will be kept at minimum. Further, it is assumed to be beneficial for public health, public security and city planning. Indeed, these consequences are listed as the aim of the Colocation and Infrastructure Sharing Communiqué<sup>17</sup>. Although, building a sustainable competitive environment is also listed among the aims of the Communiqué, previous discussions make us to conclude that the benefits listed above are preferred over infrastructure competition.

19. Last thing to be emphasised is that the TCA recently received some complaints about a possible market sharing by Turk Telekom and Superonline. After formal investigation, the inquiry closed as no such evidence was found at the down raids<sup>18</sup>.

### **3.2 Cable**

20. After being separated from Turk Telekom, cable TV operations and network were organised under a state enterprise together with satellite operations. Currently, cable TV network is solely controlled by the State and in 22 city centres in Turkey, reaching over 3 million home pass. After upgrading network with DOCSIS 3.0 technology, provision of internet access services upto 100 Mbit/s is possible.

21. Given that technological developments, more consumers prefer cable TV. After a steady increase in market shares from 2009 to 2012, number of subscribers reached 500.000. However, a slight decrease in the number of subscribers is observed.

22. Within the Information Society Strategy Renewal Project framework, importance and potential for cable TV network for NGA is emphasised and improvement possibilities are discussed, yet strategic decision making process is not finalised until now.

### **3.3 Mobile Broadband**

23. 3G services, being provided since July 2009, has reached a 90,9 % penetration ratio as of the end of 2013. That is, there are 49.266.163 3G subscribers in Turkey. Among those subscribers, 22.5 million use mobile internet access and only 1.7 million users prefer 3G to connect to the internet over their computers.

24. In a recent margin squeeze case<sup>19</sup> in the broadband market, the Competition Board decided that the retail broadband market does not include any of mobile broadband services as they are substitutes for fixed broadband services in terms of bandwidth, average download and price. That is, at the moment mobile broadband services fail to qualify as a NGA technology.

25. On the other hand, LTE technology is one of the main topics under “Broadband Infrastructure and Sectoral Competition” section of the Information Society Strategy Renewal Project. However, acknowledging the high investment costs associated with LTE technology, the report seems hesitant about it and states that the investment model is not decided yet.

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<sup>17</sup> Original name of the communiqué is “The Communiqué on the Procedures and Principles of Colocation and Infrastructure Sharing”, available (in Turkish) at <http://www.tk.gov.tr/mevzuat/tebligler/dosyalar/OYTP.pdf>.

<sup>18</sup> Decision of the TCA, dated 08.05.2014, numbered 14-17/317-135.

<sup>19</sup> Decision of the TCA, dated 19.12.2013, numbered 13-71/992-423, available at <http://www.rekabet.gov.tr/File/?path=ROOT%2fDocuments%2fGerek%c3%a7eli+Kurul+Karar%c4%b1%2f13-71-992-423.pdf>.